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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,993	04/16/2004	Lena Q. Ma	FLG-039CIP	8739

23717 7590 09/09/2005

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT PAPER NUMBER

1638

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,993

Applicant(s)

MA ET AL.

Examiner

Medina A. Ibrahim

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-53 are pending and are examined.

Information Disclosure Statement

The information disclosure statement filed 04/16/04 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. In the instant application, the IDS does not comply parts (3) and (4). The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

Claims 1, 17, 26, 46 and 53 are objected to because names of all family, genus or species should be italicized.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25, 29-36, and 46-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the method steps do not clearly set forth the steps of removing a pollutant from an environment site by foliar application. The last method step is unclear. Dependent claims 2-6 and 10-25 are included in the rejection.

Claim 7 is indefinite in the recitation of "wherein the contaminated air includes: the step of". The contaminated air is not a part of method steps. If Applicant intends ---The process of claim 6, further includes a step of contaminating air by.....----, then "wherein the contaminated air" should be replaced with ---further---.

Claim 16 is incomplete because it does not recite how to detoxify a pollutant inside in the plant.

At claim 46, the steps of removing a pollutant through ground plant part are not clearly set forth. The second method step of grounding a plant part into a ground biomass is unclear. While clarification is required new matter should be avoided. Dependent claims 47-52 are included in the rejection

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 53 is rejected under 35 U.S.C. 102(b) as anticipated by Ho et al (Bull. Environ. Contam. Toxi. vol. 35, pp. 430-438 (1985)).

The claim is directed to a biomass composition comprising ground up portions of a part of fern plant of *Pteridaceae* for removing pollutants.

Ho et al teach fronds of *Pteris vittata* which accumulate 1000 ug/g of lead and other trace elements from industrial waste sites (page 431, Results and Discussion). Therefore, Ho et al teaches all claim limitations.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No. 6, 302, 942. Although the conflicting claims are not identical, they are not patentably distinct from each other because the invention claimed in both the application and the issued patent is directed to the use of a fern plant or a part thereof of the family *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, or *Oleandraceae* to remove pollutants including arsenic from a contaminated site. Therefore, the subject matter instantly claimed which is a process of removing a pollutant including arsenic from a contaminated site

including contaminated soil, air, aqueous solution, wetland, groundwater, surface water by growing a live fern plant or a part thereof from the family of *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site or by applying an excised plant part including a live leaf, stem or spore to the contaminated site, wherein said plant or part accumulates specific concentrations of arsenic on a dry weight basis, whereby the arsenic in the contaminated site is removed, would have been obvious over the subject matter claimed in the patent, which is a process of removing a pollutant including arsenic from a contaminated soil material including sediment in said soil, waste in said soil, and water in said soil by growing a fern plant of the family *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site, such that specific amounts of arsenic are being removed. Thus, it would have been obvious to use the fern plant or a part thereof to remove pollutants including arsenic from a contaminated soil, air, aqueous solution, wastewater, wetland, groundwater and surface water by phytoremediation, without any unexpected results.

Claims 1-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of U.S. Patent No. 6, 280, 500. Although the conflicting claims are not identical, they are not patentably distinct from each other because the invention claimed in both the application and the issued patent is directed to the use of a fern plant or a part thereof of the family *Pteridaceae* including *Pteris vittata* to remove pollutants including arsenic from a contaminated site. Therefore, the subject

matter instantly claimed which is a process of removing a pollutant including arsenic from a contaminated soil or air, aqueous solution, wetland, groundwater, surface water by growing a live fern plant from the family of *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site or by applying an excised plant part including a live leaf, stem or spore to the contaminated site, wherein said the plant or a part accumulates specific concentrations of arsenic in dry wt basis, whereby the arsenic in the contaminated site is removed, would have been obvious over the subject matter claimed in the issued patent which is a process of removing a pollutant including arsenic from a contaminated soil material including wetland by growing a fern plant or part thereof of the family of *Pteridaceae* on said site, such that specific amounts of arsenic in dry wt basis are being removed. Thus, it would have been obvious to use the fern plant or a part thereof to remove pollutants including arsenic from a contaminated soil, air, aqueous solution, wastewater, wetland, ground water and surface water by phytoremediation, without unexpected results.

Claims 1-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-51 of copending Application No. 10/961,932. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications are drawn to a method of removing a pollutant including arsenic from water containing sites including aqueous solution, wetland, wastewater,

groundwater, surface water by growing a fern plant or a part from the family of *Pteridaceae* on said site, wherein the plant or a part of said plant accumulates specific concentrations of arsenic by phytoremediation, whereby the arsenic in said site is removed. Therefore, the subject matter of instant claims which is a process of removing a pollutant including arsenic from a contaminated soil or air, aqueous solution, wetland, groundwater, surface water by growing a live fern plant or a part thereof from the family of *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site or applying a excised plant part including a live leaf, stem or spore to the contaminated site, wherein said the plant or a part accumulates specific concentrations of arsenic in dry wt basis, whereby the arsenic in the contaminated site is removed, would have been obvious over the subject matter claimed in the copending application which is a process of removing a pollutant including arsenic from a contaminated aqueous solution, wetland, groundwater, surface water by growing a live *Pteris vittata* or a part thereof from China on said site, wherein the plant or part of said plant accumulates specific concentrations of arsenic in dry wt basis, whereby the arsenic in the contaminated site is removed. Thus, it would have been obvious to use the fern plant or a part thereof to remove pollutants including arsenic from a contaminated soil, air, aqueous solution, wastewater, wetland, ground water and surface water by phytoremediation, without unexpected results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-52 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-46 of copending Application No. 10/756,237. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications are drawn to a method of removing arsenic from water containing sites including aqueous solution, wetland, wastewater, groundwater, surface water by growing a fern plant from the family of *Pteridaceae* on said site, wherein the plant or a part of said plant accumulates specific concentrations of arsenic in dry wt basis, by phytoremediation. Therefore, the subject matter of instant claims which is a process of removing a pollutant including arsenic from a contaminated soil or air, aqueous solution, wetland, groundwater, surface water by growing a live fern plant from the family of *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site or applying a excised plant part including a live leaf, stem or spore to the contaminated site, wherein said the plant or a part accumulates concentration of about 110 mg/kg to 4610 mg/kg of arsenic in dry wt basis, whereby the arsenic in the contaminated site is removed, would have been obvious over the subject matter claimed in the copending application which is a process of removing a pollutant including arsenic from water containing sites including aqueous solution, wetland, wastewater, groundwater, surface water by growing a fern plant from the family of *Pteridaceae*, *Adiantaceae*, *Aspleniaceae*, *Dryopteridaceae*, and *Oleandraceae* on said site, wherein the plant or a part of said plant accumulates

arsenic concentration of about 100 mg/kg to 10,000 mg/kg of arsenic in dry wt basis, whereby the arsenic in the site is removed. Thus, it would have been obvious to use the fern plant or a part thereof to remove pollutants including arsenic from a contaminated soil, air, aqueous solution, wastewater, wetland, ground water and surface water by phytoremediation, without unexpected results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Remarks

No claim is allowed.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. Before and after final responses should be directed to fax nos. (703) 872-9306 and (703) 872-9307, respectively.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Amy Nelson, can be reached at (571) 272-0804.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8/30/05

Mai

MEDINA A. IBRAHIM
PATENT EXAMINER

